

# REGIONAL INDUSTRY FOCUS REPORT

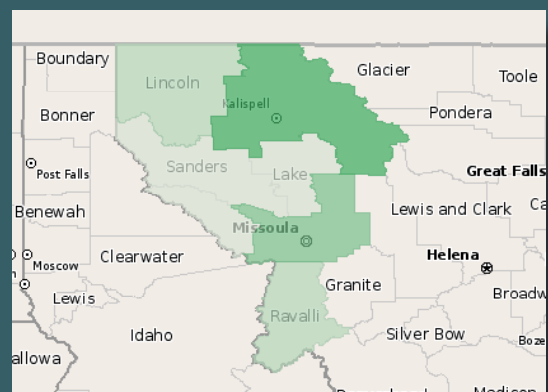
Economy Overview, Cluster Overview, Industry  
Detail, Occupations Detail, Focus Occupations,  
and Training Programs

Sponsored by:

Montana Department of Labor & Industry for  
Montana's Region 1 RIG



REGION:  
*Western Montana RIG*  
FOCUS CLUSTER:  
*Timber*  
TIMEFRAME:  
*2007–2012*



# EXECUTIVE SUMMARY

Western Montana retains a well-integrated timber industry cluster, despite overall decline in the industry as a result of reduced harvesting on federal lands and general market conditions. Economic opportunities have opened up and stabilized the region as a result of the regional focus on certain key industries: e.g. pulp, paper and other residual wood production, and the emerging markets in carbon sequestration and biofuels. Unlike other states which have seen their infrastructure slowly dwindle, the timber industry in Western Montana and the state as a whole has fared better because of its diversity. Western Montana's timber industry cluster is a valuable asset that can be leveraged in economic development initiatives.

The region's timber industry cluster encompasses over seven thousand workers employed across thirty different industries. The cluster's largest industries include sawmills, logging, reconstituted wood product manufacturing, hardwood veneer and plywood manufacturing, and paperboard mills. While some of the region's industries are declining in employment, the following industries are projected to add a total of over 300 new positions over the next five years.

- Reconstituted Wood Product Manufacturing (NAICS 321219)
- Wood Kitchen Cabinet and Countertop Manufacturing (NAICS 337110)
- Support Activities for Forestry (NAICS 115310)
- Hardwood Veneer and Plywood Manufacturing (NAICS 321211)
- Wood Window and Door Manufacturing (NAICS 321911)
- Sawmill and Woodworking Machinery Manufacturing (NAICS 333210)
- Non-upholstered Wood Household Furniture Manufacturing (NAICS 337122)

- Miscellaneous Wood Product Manufacturing (NAICS 321999)
- Lumber and Wood Merchant Wholesalers (NAICS 423310)
- Prefabricated Wood Building Manufacturing (NAICS 321992)

The region's timber industry is fed by a skilled workforce and a strong network of educational institutions. Some of the largest and most critical occupations employed by the cluster include cabinetmakers, truck drivers, supervisors of forestry workers, foresters, conservation scientists, forest and conversation workers, and forest and conversation technicians. Required education levels for these occupations range from moderate term on-the-job training to a bachelor's degree. Though declines in the timber industry do not signal growth in many of these occupational fields, impending retirements may cause potential workforce shortages. According to the U.S. Census Bureau, over 45% of workers employed in the Agriculture, Forestry, Fishing and Hunting industry (NAICS 110000) are over the age of forty-five.<sup>[1]</sup>

Information within the Regional Timber Industry Focus Report should be used by stakeholders to 1) Better understand the regional cluster; 2) Explore growth areas and examine regional training programs to ensure that they are aligned with the industries needs; and, 3) Network with industry leaders to understand the cluster's strengths and weaknesses, and explore ways to leverage strengths in future economic development efforts.

[1] Source: U.S. Census Bureau, Center for Economic Studies Last Revised: May 07, 2008

# INTRODUCTION

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## Region: Western Montana

Counties: Flathead, MT (30029), Lake, MT (30047), Lincoln, MT (30053), Mineral, MT (30061), Missoula, MT (30063), Ravalli, MT (30081), Sanders, MT (30089)

**Timeframe: 2007–2012**

## Report Goals

This report was produced by Economic Modeling Specialists Inc. and CCbenefits Inc. using a proprietary, integrated database built from 70 state and federal sources. It was developed in partnership with Workforce Strategy Center to provide a data-driven, occupation-focused overview of a regional industry cluster. The goal of the report is to assist regional planners in their understanding of the region's labor market within a particular cluster. Knowledge of the local situation is strongly recommended to interpret and apply all the data correctly.

## Report Outline

### Top Level Industries

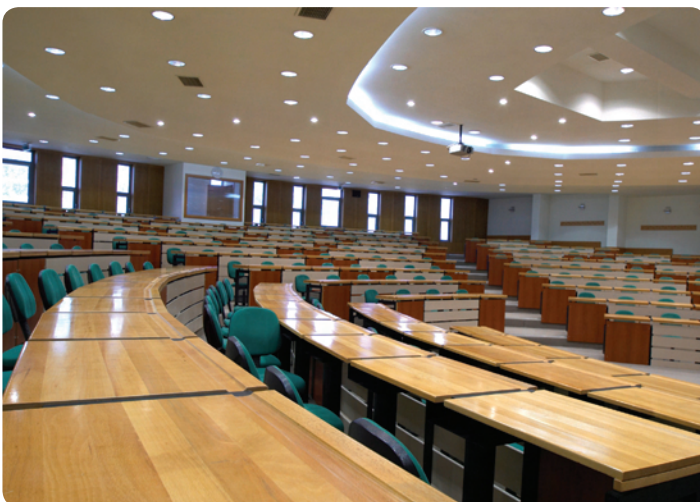
The first section provides an overview of the region's 2-digit NAICS sectors. In addition, the region's industries are benchmarked against the state.

### Industry Overview

The second section provides an overview of the industry cluster or sector selected for this report. This section includes a cluster summary, employment figures, five year projections, staffing patterns, declining industries, shift share analysis and location quotient analysis.

### Occupation Overview

The third section presents the occupations most critical to the cluster. These occupations are selected based on projected growth, total employment, average earnings per worker and educational level. This section also provides information on training programs for the selected occupations.





# DATA & METRIC DEFINITIONS

## Industry Data

**NAICS Code & Description:** The standard numerical code and name of industries. These codes are used in all state and federal industry data collection.

**Jobs:** Total number of full- and part-time jobs in the industry, including both payroll workers and proprietors, as well as estimates of nondisclosable (or “suppressed”) numbers in published data. For future years, this number is a projection based on historical trends and published state and federal ten-year projections.

**Change:** Change in total jobs over the given timeframe.

**Percent Change:** Total change divided by start year jobs.

**EPW (Earnings Per Worker):** Total industry earnings (earnings of all businesses in the industry) in the most recent published data year (2007) divided by the number of jobs in the industry. This is *not* equivalent to the industry’s “average worker wages.” For worker wages, see occupational earnings.

## Industry Shift Share

**Industrial Mix Effect:** The number of jobs expected to be added or removed from a regional industry if it followed the national industry-specific job growth rate.

**National Growth Effect:** The number of jobs expected to be added to the industry based on total national economic job growth.

**Expected Change:** The sum of the industrial mix and national growth effects.

**Competitive Effect:** The industry’s change in jobs over the given timeframe minus the expected change. This indicates how industry growth at the regional level compares to expected industry growth using national trends. A positive competitive effect is associated with a rising location quotient (see below).

## Industry Location Quotient

**LQ:** The relative concentration of the industry in the region, or in other words, a measure of the region’s special-

ization in the industry. LQ is defined as the percent share (in terms of jobs) of an industry in the regional economy divided by the percent share of the same industry in the national economy. High-LQ industries tend to be export-oriented; that is, they are specialties of the region which bring money into the regional economy rather than circulating money that is already present.

**%Change in LQ:** This indicates whether an industry is increasing or decreasing its concentration in the regional economy relative to the national economy. It is defined as the difference between the end year and start year LQ, divided by the start year LQ.

## Occupation Data

**SOC Code & Title:** The standard numerical code and occupation title used in state and federal data collection.

**Jobs:** Total number of jobs in the occupation. In future years, this number is a projection based on both historical trends and on state and federal ten-year projections.

**Change:** Total change in jobs over the given timeframe.

**Percent Change:** Total change divided by start year jobs.

**Hourly Earnings:** The median hourly earnings of all regional workers in the occupation (who may be employed both in and outside the cluster).

**Education:** The most common education level held by workers in the occupation, based on national survey data published by the federal Bureau of Labor Statistics. Most occupations have a range of education and training levels.

## Programs Data

**CIP Code & Title:** The standard program code and title used by the U.S. Department of Education for statistical purposes. In this report, programs are selected based on a national crosswalk that links occupations to programs.

**Completions:** Number of students to complete a given program in the most recent data year. These numbers are reported by individual institutions and come directly from the federal IPEDS database.

# ECONOMY OVERVIEW

The table below summarizes the broadest sectors in the regional and state economy, sorted by total 2007 jobs.

## Region

## State

NAICS Code	Description	2007 Jobs	2012 Jobs	Change	% Change	EPW	State 2007	State 2012	State % Change	State EPW
44-45	Retail trade	23,630	25,844	2,214	9%	\$25,593	74,305	80,000	8%	\$25,124
90	Government	22,753	24,012	1,259	6%	\$51,031	92,646	97,443	5%	\$51,596
62	Health care and social assistance	19,722	22,228	2,506	13%	\$38,475	64,672	73,039	13%	\$38,295
23	Construction	19,336	21,478	2,142	11%	\$37,491	56,382	62,060	10%	\$39,236
72	Accommodation and food services	15,364	16,811	1,447	9%	\$15,227	51,187	55,261	8%	\$15,283
54	Professional and technical services	10,847	11,935	1,088	10%	\$35,974	35,019	38,493	10%	\$39,824
81	Other services, except public administration	10,650	11,273	623	6%	\$17,869	34,782	37,209	7%	\$17,800
31-33	Manufacturing	10,625	10,545	(80)	(1%)	\$50,451	24,219	24,939	3%	\$51,250
56	Administrative and waste services	9,826	11,858	2,032	21%	\$23,825	27,606	33,470	21%	\$22,144
53	Real estate and rental and leasing	9,393	11,413	2,020	22%	\$41,648	26,102	31,444	20%	\$38,641
11	Agriculture, forestry, fishing and hunting	7,924	7,906	(18)	(0%)	\$20,635	39,609	40,621	3%	\$17,390
52	Finance and insurance	6,686	7,205	519	8%	\$42,588	22,987	25,405	11%	\$44,576
48-49	Transportation and warehousing	6,165	6,344	179	3%	\$53,090	21,906	23,226	6%	\$52,082
71	Arts, entertainment, and recreation	6,116	6,791	675	11%	\$12,707	18,981	21,428	13%	\$14,205
42	Wholesale trade	4,732	4,906	174	4%	\$49,502	18,877	19,267	2%	\$49,587
51	Information	2,970	3,316	346	12%	\$40,356	9,513	10,845	14%	\$41,613
61	Educational services	2,647	2,911	264	10%	\$18,674	8,540	9,271	9%	\$18,273
21	Mining	967	982	15	2%	\$43,439	9,406	9,842	5%	\$85,935
22	Utilities	546	584	38	7%	\$82,619	3,121	2,963	(5%)	\$115,559
55	Management of companies and enterprises	520	519	(1)	(0%)	\$70,002	1,523	1,784	17%	\$54,192
		191,417	208,859	17,442	9%	\$34,509	641,383	698,007	9%	\$35,636

EPW: Total annual industry earnings per worker.

# CLUSTER SUMMARY

## Cluster Definition

### Selected Industries

Timber tract operations (NAICS 113110)  
 Forest nursery and gathering forest products (NAICS 113210)  
 Logging (NAICS 113310)  
 Support activities for forestry (NAICS 115310)  
 Sawmills (NAICS 321113)  
 Wood preservation (NAICS 321114)  
 Hardwood veneer and plywood manufacturing (NAICS 321211)  
 Softwood veneer and plywood manufacturing (NAICS 321212)  
 Engineered wood member manufacturing (NAICS 321213)  
 Truss manufacturing (NAICS 321214)  
 Reconstituted wood product manufacturing (NAICS 321219)  
 Wood window and door manufacturing (NAICS 321911)  
 Cut stock, resawing lumber, and planing (NAICS 321912)  
 Other millwork, including flooring (NAICS 321918)  
 Wood container and pallet manufacturing (NAICS 321920)  
 Prefabricated wood building manufacturing (NAICS 321992)  
 Miscellaneous wood product manufacturing (NAICS 321999)  
 Paperboard mills (NAICS 322130)  
 Corrugated and solid fiber box manufacturing (NAICS 322211)  
 Coated and laminated packaging materials mfg. (NAICS 322221)  
 Sanitary paper product manufacturing (NAICS 322291)  
 Sawmill and woodworking machinery (NAICS 333210)  
 Wood kitchen cabinet and countertop mfg. (NAICS 337110)  
 Upholstered household furniture manufacturing (NAICS 337121)  
 Nonupholstered wood household furniture mfg. (NAICS 337122)  
 Institutional furniture manufacturing (NAICS 337127)  
 Wood office furniture manufacturing (NAICS 337211)  
 Custom architectural woodwork and millwork (NAICS 337212)  
 Showcases, partitions, shelving, and lockers (NAICS 337215)  
 Lumber and wood merchant wholesalers (NAICS 423310)

## Basic Information, Total Cluster

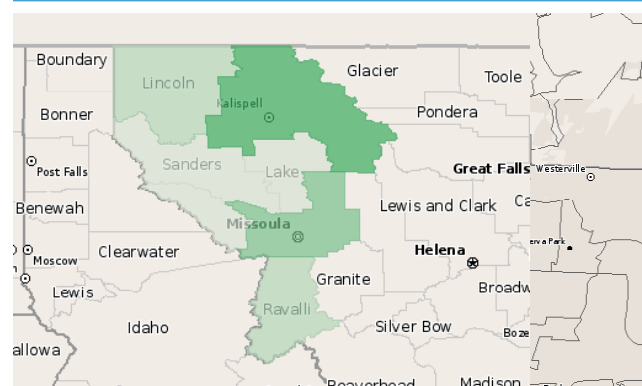
2007 Industry Jobs	7,186
2012 Industry Jobs	6,563
Total Change	-623
Total % Change	-8.64%
2007 Average Earnings/Worker	\$52,032

## Economic Indicators, Total Cluster

2007 Location Quotient	4.29
2012 Location Quotient	3.78
Shift Share: Regional Competitiveness Effect	-775
Shift Share: Industrial Mix Effect	-484
Shift Share: National Effect	635

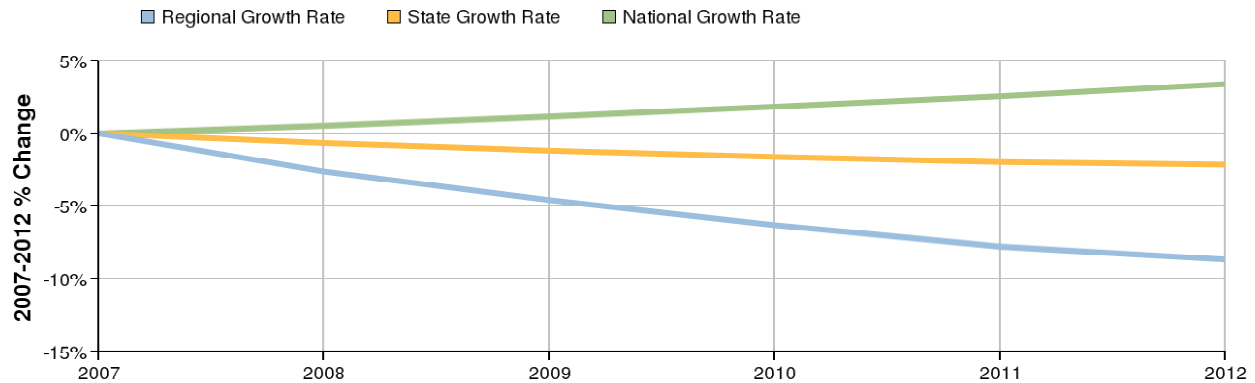
## Cluster Employment by County

County	2007 Jobs
Flathead, MT (30029)	2,313
Missoula, MT (30063)	2,173
Ravalli, MT (30081)	959
Lincoln, MT (30053)	739
Lake, MT (30047)	410
Sanders, MT (30089)	354
Mineral, MT (30061)	238



Darker areas on the map represent more cluster jobs in that area while lighter areas represent fewer jobs. Actual job ranges are shown in the map key.

## Total Cluster Growth, Region vs. State and Nation

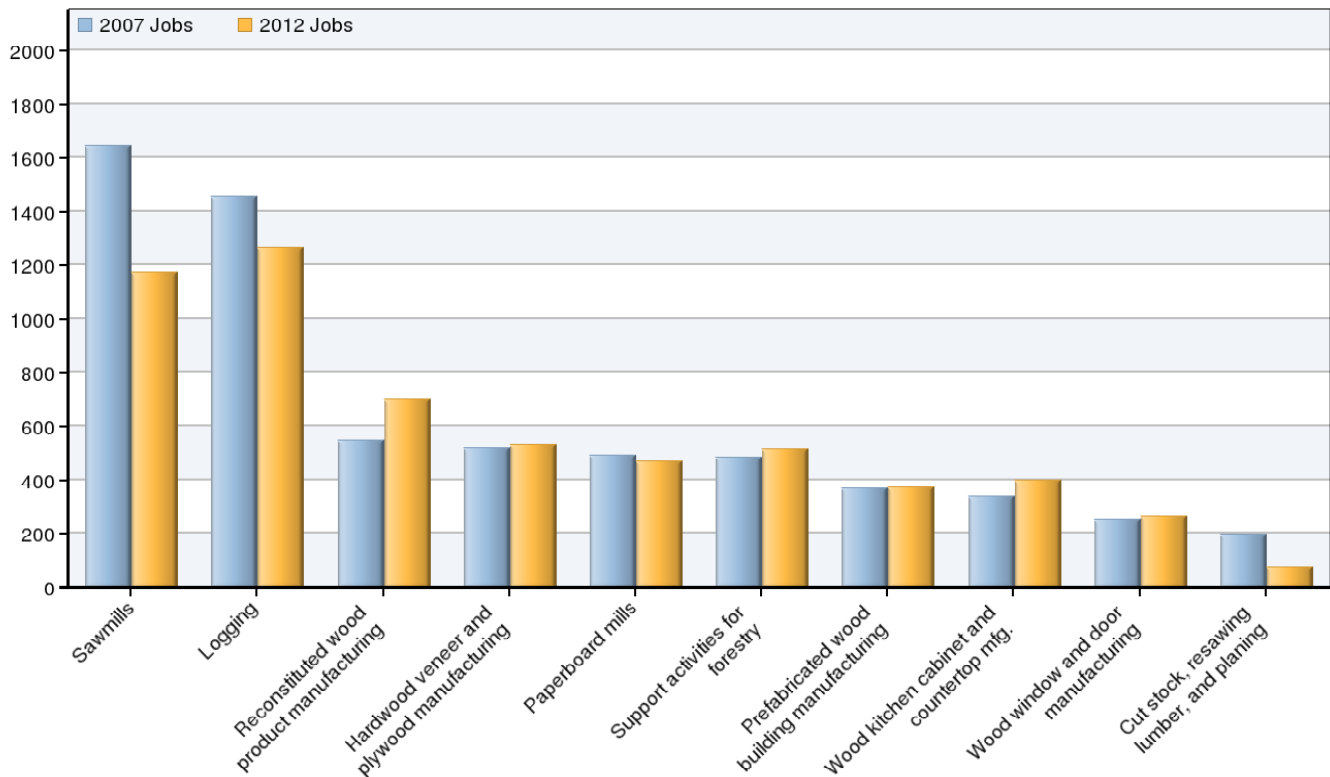


Description	2007 Jobs	2012 Jobs	Change	% Change	EPW
Regional Total	7,186	6,563	(623)	(9%)	\$52,032
State Total	10,790	10,557	(233)	(2%)	\$47,365
National Total	1,555,892	1,608,174	52,282	3%	\$47,187

EPW: Total annual industry earnings per worker.

## Largest Cluster Industries

These are the largest industries, in terms of employment, for the cluster.



# CLUSTER DETAIL

## Detailed Cluster Data (Sorted by Total Employment)

*The industries in gray are charted on the previous page.*

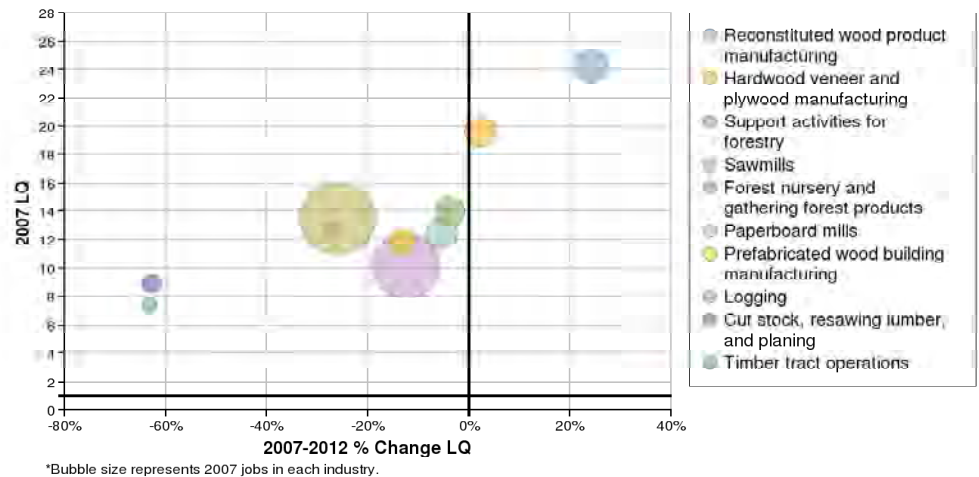
NAICS Code	Description	2007 Jobs	2012 Jobs	2006 EPW
321113	Sawmills	1,647	1,174	\$46,091
113310	Logging	1,459	1,265	\$40,662
321219	Reconstituted wood product manufacturing	546	700	\$63,352
321211	Hardwood veneer and plywood manufacturing	517	532	\$52,973
322130	Paperboard mills	492	470	\$142,409
115310	Support activities for forestry	486	514	\$33,202
321992	Prefabricated wood building manufacturing	371	373	\$53,198
337110	Wood kitchen cabinet and countertop mfg.	338	400	\$34,167
321911	Wood window and door manufacturing	249	263	\$30,974
321912	Cut stock, resawing lumber, and planing	197	74	\$58,618
423310	Lumber and wood merchant wholesalers	190	196	\$61,149
321214	Truss manufacturing	134	132	\$33,978
337122	Nonupholstered wood household furniture mfg.	100	111	\$28,001
113210	Forest nursery and gathering forest products	84	71	\$44,804
321999	Miscellaneous wood product manufacturing	64	72	\$21,556
113110	Timber tract operations	60	21	\$127,452
337127	Institutional furniture manufacturing	57	56	\$26,383
321213	Engineered wood member manufacturing	46	25	\$36,589
321920	Wood container and pallet manufacturing	34	31	\$17,717
337215	Showcases, partitions, shelving, and lockers	31	12	\$44,349
321114	Wood preservation	29	19	\$45,311
333210	Sawmill and woodworking machinery	20	33	\$38,270
321212	Softwood veneer and plywood manufacturing	18	<10	--
321918	Other millwork, including flooring	10	<10	--
322211	Corrugated and solid fiber box manufacturing	<10	<10	--
337121	Upholstered household furniture manufacturing	<10	<10	--
322291	Sanitary paper product manufacturing	0	0	\$0
337211	Wood office furniture manufacturing	0	0	\$0
322221	Coated and laminated packaging materials mfg.	0	0	\$0
337212	Custom architectural woodwork and millwork	0	0	\$0
Total		7,186	6,563	\$52,032

EPW: Total annual industry earnings per worker.



## Cluster Industries with Highest Regional Concentration

Location quotient (LQ), or “industry concentration,” is a way of quantifying how concentrated an industry is in a region or state. For example, if an industry is responsible for .5% of national jobs but 1.5% of regional jobs, then it has an LQ of 3 in the region. By showing regional “specialties,” this metric highlights exporting sectors that bring money into the region (and thus form the base for other dependent industries).



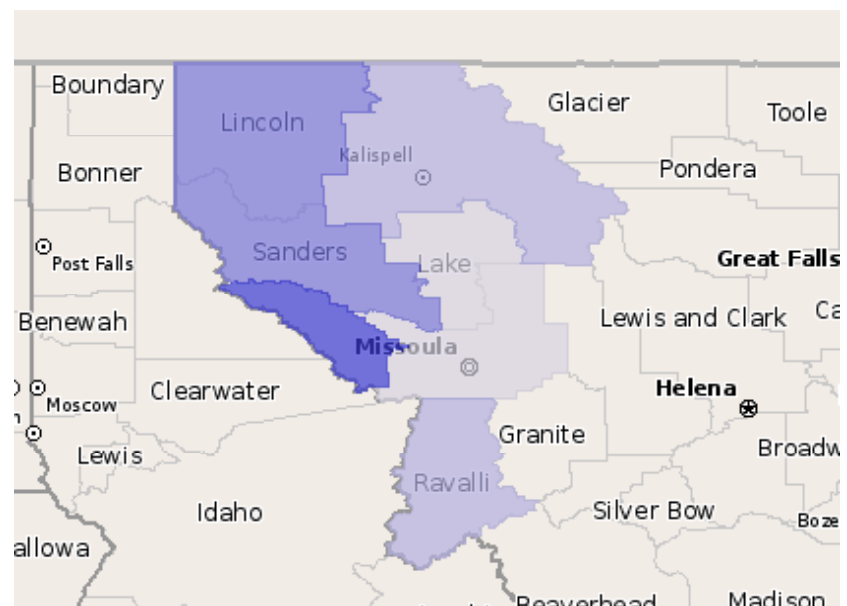
The bubble graph conveys three separate pieces of information. An industry’s position on the vertical axis represents its current LQ, while its position on the horizontal axis indicates its percent change in LQ over the given time period. The size of the bubble corresponds to the size of the industry in terms of jobs.

- LQ of 1.0 indicates that the region’s industry concentration is similar to national industry concentration.
- LQ below 1.0 indicates that the region’s industry concentration is below the national average.
- LQ above 1.0 indicates that the regional economy is “concentrated” in that industry.
- LQ above 1.2 (or 20% greater than the national average) indicates that the regional economy is “specialized” in that industry.

County	2007 Location Quotient
Mineral, MT (30061)	12.12
Lincoln, MT (30053)	8.72
Sanders, MT (30089)	6.87
Ravalli, MT (30081)	5.36
Flathead, MT (30029)	4.25
Missoula, MT (30063)	3.26
Lake, MT (30047)	3.15

## Total Regional Cluster Concentration (Location Quotient) by County

The table and map below show cluster location quotient (LQ) by county. On the map, darker shades indicate higher LQ while lighter shades indicate lower LQ; actual ranges are indicated by the map key.



## Concentrations (Location Quotients) of Cluster Industries

■ = Specialized (LQ > 1.2) ■ = Concentrated (1.0 < LQ < 1.2) ■ = Below national concentration (LQ < 1.0)

NAICS Code	Description	2007 Jobs	2007 LQ	2012 LQ
321219	Reconstituted wood product manufacturing	546	24.24	30.09
321211	Hardwood veneer and plywood manufacturing	517	19.58	20.04
115310	Support activities for forestry	486	13.99	13.46
321113	Sawmills	1,647	13.48	9.98
113210	Forest nursery and gathering forest products	84	12.77	9.28
322130	Paperboard mills	492	12.41	11.73
321992	Prefabricated wood building manufacturing	371	11.85	10.29
113310	Logging	1,459	10.17	8.90
321912	Cut stock, resawing lumber, and planing	197	8.92	3.32
113110	Timber tract operations	60	7.42	2.73
321213	Engineered wood member manufacturing	46	4.39	2.08
321911	Wood window and door manufacturing	249	2.71	2.47
321214	Truss manufacturing	134	2.39	1.88
333210	Sawmill and woodworking machinery	20	2.30	4.32
321114	Wood preservation	29	2.10	1.46
321999	Miscellaneous wood product manufacturing	64	2.05	2.61
337127	Institutional furniture manufacturing	57	1.98	1.91
337110	Wood kitchen cabinet and countertop mfg.	338	1.71	1.78
337122	Nonupholstered wood household furniture mfg.	100	1.31	2.12
423310	Lumber and wood merchant wholesalers	190	1.23	1.16
321212	Softwood veneer and plywood manufacturing	18	0.84	0.41
321920	Wood container and pallet manufacturing	34	0.47	0.42
337215	Showcases, partitions, shelving, and lockers	31	0.42	0.19
321918	Other millwork, including flooring	10	0.14	0.06
322211	Corrugated and solid fiber box manufacturing	<10	--	--
337121	Upholstered household furniture manufacturing	<10	--	--
337212	Custom architectural woodwork and millwork	0	0.00	0.00
337211	Wood office furniture manufacturing	0	0.00	0.00
322291	Sanitary paper product manufacturing	0	0.00	0.00
322221	Coated and laminated packaging materials mfg.	0	0.00	0.00
Total		7,186	4.29	3.78

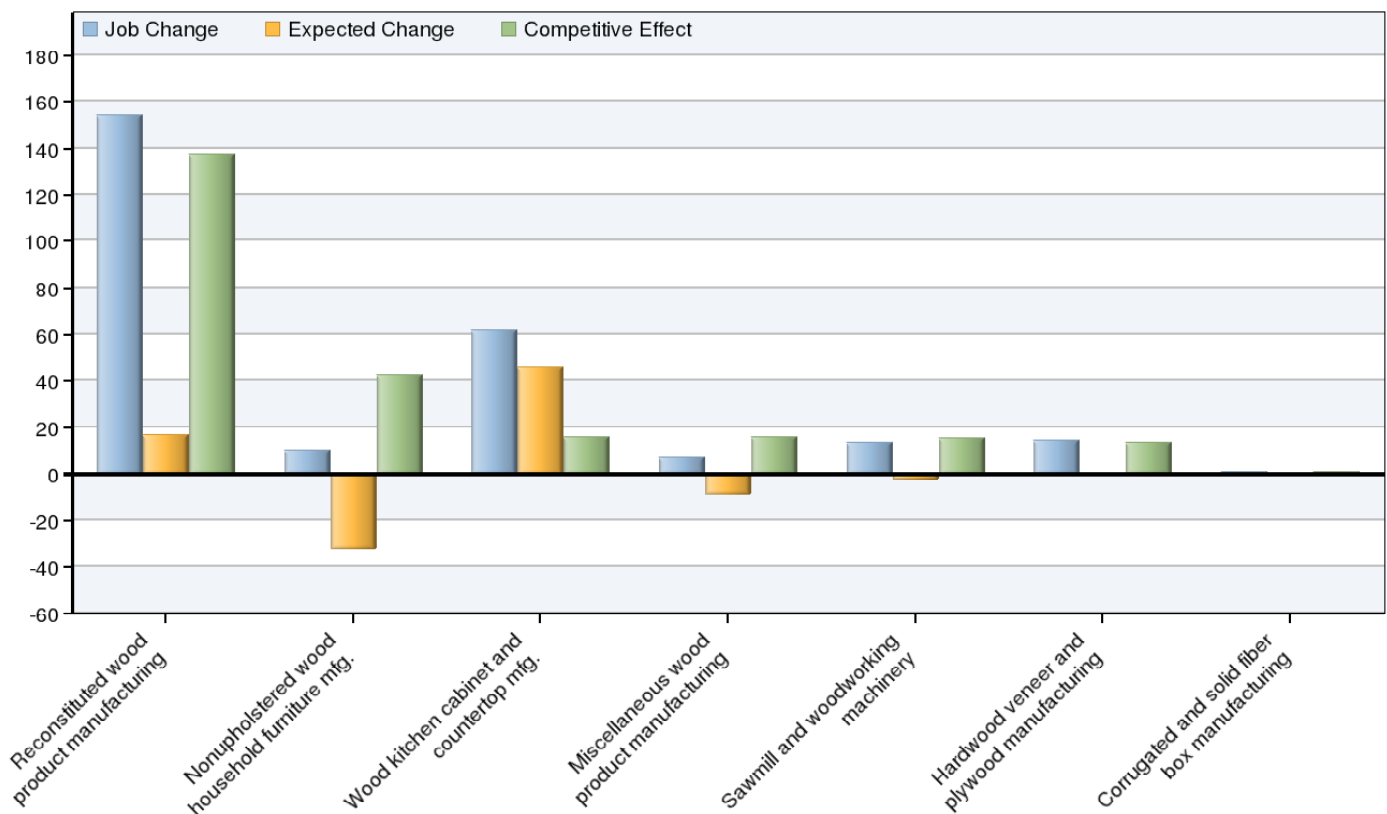
## Regional Competitiveness (Shift Share)

Regional competitiveness or “shift share” isolates growth (projected to occur over the next ten years) that can be attributed to regional causes rather than simply to national economic or industry trends. The figure below is a simplified shift share graph that shows the “competitive effect” (green bar) for each industry sector, which is job growth beyond what would be expected according to national trends. It shows how much these industries are growing beyond (or in spite of) national trends. Local knowledge should be employed to discover why these industries are outperforming national trends and thus reveal the region’s competitive advantages.

The competitive effect is total regional industry “job change” (actual and/or projected, depending on the timeframe used) minus the “expected change,” which is the sum of (1) the “national growth effect” (growth that might be expected due to growth trends in the national economy as a whole) and (2) the “industrial mix effect” (growth that might be expected because of growth in that specific industry at a national level).

The competitive effect might exceed actual job growth because the national growth and industrial mix effect may be negative. In this case, the competitive effect includes regional jobs “saved” that would have been lost if the industry had followed national trends. Also, a strong industry may be growing rapidly but show a low competitiveness effect simply because the same industry is also growing rapidly at the national level.

A positive competitive effect is associated with a rising location quotient (see previous pages).



## Regional Competitiveness (Shift Share) of Cluster Industries

This table provides detailed shift share calculations for all cluster industries. See previous page for column definitions.

■ = Positive competitive effect ■ = Zero or negative competitive effect

NAICS Code	Description	Job Change	Ind Mix Effect	Nat Growth Effect	Expected Change	Competitive Effect
321219	Reconstituted wood product manufacturing	154	(31)	48	17	137
337122	Nonupholstered wood household furniture mfg.	11	(41)	9	(32)	42
337110	Wood kitchen cabinet and countertop mfg.	62	16	30	46	16
321999	Miscellaneous wood product manufacturing	8	(14)	6	(9)	16
333210	Sawmill and woodworking machinery	13	(4)	2	(2)	15
321211	Hardwood veneer and plywood manufacturing	15	(45)	46	1	13
322211	Corrugated and solid fiber box manufacturing	1	(0)	0	0	1
337121	Upholstered household furniture manufacturing	1	(0)	0	0	1
337212	Custom architectural woodwork and millwork	0	0	0	0	0
322221	Coated and laminated packaging materials mfg.	0	0	0	0	0
322291	Sanitary paper product manufacturing	0	0	0	0	0
337211	Wood office furniture manufacturing	0	0	0	0	0
337127	Institutional furniture manufacturing	(1)	(4)	5	1	(2)
321920	Wood container and pallet manufacturing	(3)	(2)	3	1	(4)
321918	Other millwork, including flooring	(6)	0	1	1	(7)
321114	Wood preservation	(10)	(4)	3	(1)	(8)
321212	Softwood veneer and plywood manufacturing	(10)	(3)	2	(2)	(9)
423310	Lumber and wood merchant wholesalers	6	0	17	17	(11)
337215	Showcases, partitions, shelving, and lockers	(19)	(6)	3	(3)	(15)
115310	Support activities for forestry	28	4	43	47	(19)
321911	Wood window and door manufacturing	14	16	22	38	(25)
322130	Paperboard mills	(22)	(39)	43	5	(26)
113210	Forest nursery and gathering forest products	(13)	6	7	13	(26)
321213	Engineered wood member manufacturing	(21)	2	4	6	(28)
321214	Truss manufacturing	(2)	22	12	33	(35)
113110	Timber tract operations	(39)	(7)	5	(2)	(37)
321992	Prefabricated wood building manufacturing	2	24	33	57	(55)
321912	Cut stock, resawing lumber, and planing	(123)	(15)	17	3	(125)
113310	Logging	(194)	(147)	129	(18)	(177)
321113	Sawmills	(473)	(211)	146	(66)	(408)
Total		-621	-484	635	151	-775



## Declining Industries in the Cluster

These are the industries projected to experience employment decline over the next five years (organized by job change). Included in this analysis are current and projected regional jobs, change, and average industry earnings per worker. Job change and earnings are not shown for industries with less than 10 regional jobs.

NAICS Code	Description	2007 Jobs	2012 Jobs	Change	% Change	2006 EPW
321113	Sawmills	1,647	1,174	(473)	(29%)	\$46,091
113310	Logging	1,459	1,265	(194)	(13%)	\$40,662
321912	Cut stock, resawing lumber, and planing	197	74	(123)	(62%)	\$58,618
113110	Timber tract operations	60	21	(39)	(65%)	\$127,452
322130	Paperboard mills	492	470	(22)	(4%)	\$142,409
321213	Engineered wood member manufacturing	46	25	(21)	(46%)	\$36,589
337215	Showcases, partitions, shelving, and lockers	31	12	(19)	(61%)	\$44,349
113210	Forest nursery and gathering forest products	84	71	(13)	(15%)	\$44,804
321114	Wood preservation	29	19	(10)	(34%)	\$45,311
321212	Softwood veneer and plywood manufacturing	18	<10	--	--	--
321918	Other millwork, including flooring	10	<10	--	--	--
321920	Wood container and pallet manufacturing	34	31	(3)	(9%)	\$17,717
321214	Truss manufacturing	134	132	(2)	(1%)	\$33,978
337127	Institutional furniture manufacturing	57	56	(1)	(2%)	\$26,383

EPW: Total annual industry earnings per worker.

# OCCUPATIONS OVERVIEW

## Largest Occupations in Cluster

The following 50 occupations are the largest, by employment, within the cluster. The table includes current and projected employment (in cluster only), job change, % change, median earnings per worker (both cluster and non-cluster), and base level education level (according to BLS). *Education Abbreviations:*

ST OJT: Short-term on-the-job training

MT OJT: Moderate-term on-the-job training

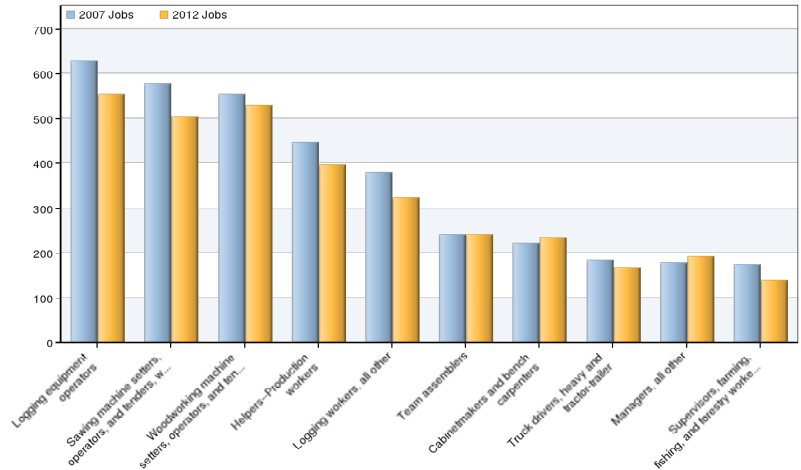
LT OJT: Long-term on-the-job training

Exp. in field: Work experience in a related field

PS award: Postsecondary vocational award

Deg. + exp.: Degree plus work experience

Prof.: First professional degree



**Note:** Occupations in gray appear in the bar chart.

SOC Code	Description	2007 Jobs	2012 Jobs	Change	% Change	Hourly Earnings	Education Level
45-4022	Logging equipment operators	628	554	(74)	(12%)	\$16.97	MT OJT
51-7041	Sawing machine setters, operators, and tenders, wood	579	505	(74)	(13%)	\$18.81	MT OJT
51-7042	Woodworking machine setters, operators, and tenders, except sawing	555	529	(26)	(5%)	\$13.43	MT OJT
51-9198	Helpers--Production workers	447	396	(51)	(11%)	\$10.55	ST OJT
45-4029	Logging workers, all other	380	324	(56)	(15%)	\$14.97	MT OJT
51-2092	Team assemblers	243	242	(1)	(0%)	\$10.70	MT OJT
51-7011	Cabinetmakers and bench carpenters	223	235	12	6%	\$14.26	LT OJT
53-3032	Truck drivers, heavy and tractor-trailer	184	168	(16)	(9%)	\$17.46	MT OJT
11-9199	Managers, all other	179	192	13	8%	\$20.65	Exp. in field
45-1099	Supervisors, farming, fishing, and forestry workers	175	140	(35)	(20%)	\$21.12	Exp. in field
53-7062	Laborers and freight, stock, and material movers, hand	172	142	(30)	(17%)	\$11.06	ST OJT
19-1032	Foresters	163	123	(40)	(24%)	\$23.81	Bachelor's
45-4021	Fallers	154	123	(31)	(20%)	\$17.86	MT OJT
53-7051	Industrial truck and tractor operators	148	123	(25)	(16%)	\$14.65	ST OJT
51-1011	First-line supervisors/managers of production and operating workers	141	134	(7)	(5%)	\$22.49	Exp. in field
45-4023	Log graders and scalers	140	110	(30)	(21%)	\$18.64	MT OJT
47-2031	Carpenters	129	127	(2)	(1%)	\$16.06	LT OJT
53-7063	Machine feeders and offbearers	122	101	(21)	(17%)	\$15.48	ST OJT
43-3031	Bookkeeping, accounting, and auditing clerks	117	109	(8)	(7%)	\$12.33	MT OJT
49-9044	Millwrights	117	105	(12)	(10%)	\$19.53	LT OJT
11-1021	General and operations managers	109	96	(13)	(12%)	\$26.27	Deg. + exp.
41-4012	Sales representatives, wholesale and manufacturing, except technical and scientific products	96	96	0	(1%)	\$20.06	MT OJT
45-2092	Farmworkers and laborers, crop, nursery, and greenhouse	86	93	7	9%	\$11.25	ST OJT
49-9042	Maintenance and repair workers, general	68	61	(7)	(10%)	\$14.75	MT OJT
43-6014	Secretaries, except legal, medical, and executive	63	55	(8)	(13%)	\$11.12	MT OJT
51-9061	Inspectors, testers, sorters, samplers, and weighers	60	51	(9)	(14%)	\$15.58	MT OJT
53-7011	Conveyor operators and tenders	60	50	(10)	(16%)	\$19.23	ST OJT

## Largest Occupations in Cluster (Continued)

SOC Code	Description	2007 Jobs	2012 Jobs	Change	% Change	Hourly Earnings	Education Level
51-8021	Stationary engineers and boiler operators	54	47	(7)	(13%)	\$23.40	LT OJT
37-2011	Janitors and cleaners, except maids and housekeeping cleaners	53	46	(7)	(12%)	\$9.57	ST OJT
43-6011	Executive secretaries and administrative assistants	52	48	(4)	(6%)	\$14.07	MT OJT
19-1031	Conservation scientists	51	39	(12)	(24%)	\$20.94	Bachelor's
11-1011	Chief executives	46	45	(1)	(0%)	\$21.88	Deg. + exp.
47-2111	Electricians	44	41	(3)	(6%)	\$20.99	LT OJT
45-2093	Farmworkers, farm and ranch animals	41	45	4	9%	\$7.45	ST OJT
53-3033	Truck drivers, light or delivery services	39	38	(1)	(4%)	\$14.45	ST OJT
39-2021	Nonfarm animal caretakers	38	40	2	5%	\$6.78	ST OJT
43-9061	Office clerks, general	37	34	(3)	(9%)	\$10.95	ST OJT
51-2099	Assemblers and fabricators, all other	37	36	(1)	(0%)	\$12.22	MT OJT
39-2011	Animal trainers	34	36	2	5%	\$7.24	MT OJT
11-9012	Farmers and ranchers	34	31	(3)	(10%)	\$6.25	LT OJT
49-9041	Industrial machinery mechanics	32	32	0	0%	\$19.06	LT OJT
43-5071	Shipping, receiving, and traffic clerks	32	30	(2)	(8%)	\$10.80	ST OJT
45-2041	Graders and sorters, agricultural products	31	29	(2)	(6%)	\$14.38	Exp. in field
11-3051	Industrial production managers	29	28	(1)	(4%)	\$34.99	Exp. in field
51-9041	Extruding, forming, pressing, and compacting machine setters, operators, and tenders	28	30	2	6%	\$13.75	MT OJT
49-9043	Maintenance workers, machinery	26	24	(2)	(7%)	\$18.50	ST OJT
13-1023	Purchasing agents, except wholesale, retail, and farm products	24	22	(2)	(10%)	\$17.95	Exp. in field
51-7099	Woodworkers, all other	23	23	0	(4%)	\$24.54	MT OJT
51-9199	Production workers, all other	23	21	(2)	(7%)	\$14.27	MT OJT
53-7064	Packers and packagers, hand	22	17	(5)	(24%)	\$7.26	ST OJT

Hourly earnings are the median for workers in the occupation.

## Fastest Changing Occupations

SOC Code	Description	Change
51-7041	Sawing machine setters, operators, and tenders, wood	(74)
45-4022	Logging equipment operators	(74)
45-4029	Logging workers, all other	(56)
51-9198	Helpers--Production workers	(51)
19-1032	Foresters	(40)
45-1099	Supervisors, farming, fishing, and forestry workers	(35)
45-4021	Fallers	(31)
45-4023	Log graders and scalers	(30)
53-7062	Laborers and freight, stock, and material movers, hand	(30)
51-7042	Woodworking machine setters, operators, and tenders, except sawing	(26)

## Fastest Changing Occupations (%)

SOC Code	Description	% Change
51-2023	Electromechanical equipment assemblers	64%
51-4011	Computer-controlled machine tool operators, metal and plastic	54%
51-2022	Electrical and electronic equipment assemblers	47%
43-9021	Data entry keyers	(42%)
45-4011	Forest and conservation workers	(30%)
51-4194	Tool grinders, filers, and sharpeners	(30%)
51-2041	Structural metal fabricators and fitters	29%
19-1032	Foresters	(24%)
53-7064	Packers and packagers, hand	(24%)
51-4122	Welding, soldering, and brazing machine setters, operators, and tenders	24%

# FOCUS OCCUPATIONS

## Focus Occupations for the Cluster

The following occupations were selected for further analysis based on (1) size within the cluster, (2) growth, (3) median hourly earnings, and (4) average education level (note that this level is a survey-based average, and does not reflect local need or demand for workers with higher levels of education).

SOC Code	Description	2007 Jobs	2012 Jobs	Change	% Change	Hourly Earnings	Education Level
51-7011	Cabinetmakers and bench carpenters	223	235	12	6%	\$14.26	LT OJT
53-3032	Truck drivers, heavy and tractor-trailer	184	168	(16)	(9%)	\$17.46	MT OJT
45-1099	Supervisors, farming, fishing, and forestry workers	175	140	(35)	(20%)	\$21.12	Exp. in field
19-1032	Foresters	163	123	(40)	(24%)	\$23.81	Bachelor's
19-1031	Conservation scientists	51	39	(12)	(24%)	\$20.94	Bachelor's
45-4011	Forest and conservation workers	20	14	(6)	(30%)	\$22.98	MT OJT
19-4093	Forest and conservation technicians	--	--	--	--	\$14.17	Associate's

*Note: Jobs and job change numbers include only jobs in the cluster, not total regional jobs in this occupation. Earnings, however, are for all regional jobs in each occupation, cluster and non-cluster.*

## Total Regional Focus Occupation Jobs (Cluster and Non-Cluster)

SOC Code	Description	2007 Jobs	2012 Jobs	Change	% Change	% Replacement Jobs	% New & Rep.	Hourly Earnings
53-3032	Truck drivers, heavy and tractor-trailer	2,523	2,562	39	2%	187	9%	\$17.46
19-4093	Forest and conservation technicians	1,162	1,302	140	12%	232	32%	\$14.17
51-7011	Cabinetmakers and bench carpenters	253	267	14	6%	27	16%	\$14.26
45-1099	Supervisors, farming, fishing, and forestry workers	213	179	(34)	(16%)	18	(8%)	\$21.12
19-1032	Foresters	193	156	(37)	(19%)	28	(5%)	\$23.81
19-1031	Conservation scientists	127	122	(5)	(4%)	17	10%	\$20.94
45-4011	Forest and conservation workers	30	25	(5)	(17%)	6	2%	\$22.98

*Replacement Jobs: Estimated number of job openings over the selected timeframe due to retirement, turnover, and other causes (as opposed to new job openings indicated in the "Change" column).*

*% New & Rep.: New and replacement jobs as a percentage of total start year jobs. A high percentage indicates a dynamic job market with strong hiring activity, while a low percentage indicates a more static job market.*

*\* No corresponding CIP programs found in regional institutions. It will not be included in the Focus Programs section.*



# FOCUS OCCUPATION PROGRAMS

## Overview of Program Data

In the following pages, the focus occupations will be tied to regional training programs and providers, together with recent completions in each relevant program as reported in the national IPEDS database (<http://nces.ed.gov>). This process converts the initial SOC-coded occupations to O\*NET-coded occupations, which may differ slightly—in particular, O\*NET occupations may be more specific than SOC occupations (see <http://www.onetcenter.org>). Finally, these O\*NET occupations are tied to standard program (CIP) codes using an expanded version of the crosswalk created by the U.S. Department of Education (see <http://nces.ed.gov/pubs2002/cip2000/>).

Not all focus occupations may be included, either because there are no standard programs (CIPs) tied to them, or no relevant programs are offered in the region. Programs which are offered but have zero completions are still included.

Data included are as follows:

- *Relevant programs:* The table shows all relevant CIP programs related to the given occupation and total regional completions in each. If the program is not currently offered in the region, the “completions” column will show “Program not in region.”
- *Total completions by County:* The table shows total completions in all relevant programs for each county in the region.
- *Detailed completions:* Finally, the last table provides detailed completions by program and award level at each regional education/training institution.

## Forest and Conservation Workers and Technicians (O\*NET Codes 19-4093.00, 45-4011.00)

Description: 1) Compile data pertaining to size, content, condition, and other characteristics of forest tracts, under direction of foresters; train and lead forest workers in forest propagation, fire prevention and suppression. May assist conservation scientists in managing, improving, and protecting rangelands and wildlife habitats, and help provide technical assistance regarding the conservation of soil, water, and related natural resources; 2) Under supervision, perform manual labor necessary to develop, maintain, or protect forest, forested areas, and woodlands through such activities as raising and transporting tree seedlings; combating insects, pests, and diseases harmful to trees; and building erosion and water control structures and leaching of forest soil. Includes forester aides, seedling pullers, and tree planters.

### Relevant Occupational Programs (All Degree Levels)

CIP Code	Title	2006 Completions	Total Completions by County	
			County	Completions
3.0501	Forestry, General	63	30063 (Missoula)	96
3.0101	Natural Resources/Conservation, General	31	30047 (Lake)	2
3.9999	Natural Resources and Conservation, Other	2	30029 (Flathead)	2
3.0511	Forest Technology/Technician	2	30053 (Lincoln)	0
3.0299	Natural Resources Management and Policy, Other	2	30061 (Mineral)	0
			30081 (Ravalli)	0
			30089 (Sanders)	0

### Relevant Programs and Completions by Institution

CIP Code	Title	Institution	Award Level	2006 Completions
3.0501	Forestry, General	The University of Montana	Bachelor's degree	38
3.0101	Natural Resources/Conservation, General	The University of Montana	Bachelor's degree	27
3.0501	Forestry, General	The University of Montana	Master's degree	17
3.0501	Forestry, General	The University of Montana	Doctor's degree	8
3.0101	Natural Resources/Conservation, General	The University of Montana	Master's degree	4
3.9999	Natural Resources and Conservation, Other	The University of Montana	Award of at least 1 but less than 2 academic years	2
3.0299	Natural Resources Management and Policy, Other	Flathead Valley Community College	Associate's degree	2
3.0511	Forest Technology/Technician	Salish Kootenai College	Associate's degree	2

## Foresters (0\*NET Code 19-1032.00)

Description: Manage forested lands for economic, recreational, and conservation purposes. May inventory the type, amount, and location of standing timber, appraise the timber's worth, negotiate the purchase, and draw up contracts for procurement. May determine how to conserve wildlife habitats, creek beds, water quality, and soil stability, and how best to comply with environmental regulations. May devise plans for planting and growing new trees, monitor trees for healthy growth, and determine the best time for harvesting. Develop forest management plans for public and privately-owned forested lands.

### Relevant Occupational Programs (All Degree Levels)

CIP Code	Title	2006 Completions
3.0501	Forestry, General	63
3.0101	Natural Resources/Conservation, General	31
3.0201	Natural Resources Management and Policy	3
3.9999	Natural Resources and Conservation, Other	2
3.0299	Natural Resources Management and Policy, Other	2

### Total Completions by County

County	Completions
30063 (Missoula)	99
30029 (Flathead)	2
30047 (Flathead)	0
30053 (Lincoln)	0
30061 (Mineral)	0
30081 (Ravalli)	0
30089 (Sanders)	0

### Relevant Programs and Completions by Institution

CIP Code	Title	Institution	Award Level	2006 Completions
3.0501	Forestry, General	The University of Montana	Bachelor's degree	38
3.0101	Natural Resources/Conservation, General	The University of Montana	Bachelor's degree	27
3.0501	Forestry, General	The University of Montana	Master's degree	17
3.0501	Forestry, General	The University of Montana	Doctor's degree	8
3.0101	Natural Resources/Conservation, General	The University of Montana	Master's degree	4
3.0201	Natural Resources Management and Policy	The University of Montana	Master's degree	3
3.0299	Natural Resources Management and Policy, Other	Flathead Valley Community College	Associate's degree	2
3.9999	Natural Resources and Conservation, Other	The University of Montana	Award of at least 1 but less than 2 academic years	2
3.0201	Natural Resources Management and Policy	The University of Montana	Bachelor's degree	0

## Park Naturalists, Range Managers, and Soil and Water Conservationists (O\*NET Code 19-1031.01, .02, .03)

Description: 1) Plan, develop, and conduct programs to inform public of historical, natural, and scientific features of national, state, or local park; 2) Research or study range land management practices to provide sustained production of forage, livestock, and wildlife; 3) Plan and develop coordinated practices for soil erosion control, soil and water conservation, and sound land use.

### Relevant Occupational Programs (All Degree Levels)

CIP Code	Title	2006 Completions
3.0501	Forestry, General	63
3.0601	Wildlife and Wildlands Science and Management	49
3.0101	Natural Resources/Conservation, General	31
3.0201	Natural Resources Management and Policy	3
3.9999	Natural Resources and Conservation, Other	2
3.0299	Natural Resources Management and Policy, Other	2

### Total Completions by County

County	Completions
30063 (Missoula)	148
30029 (Flathead)	2
30047 (Lake)	0
30053 (Lincoln)	0
30061 (Mineral)	0
30081 (Ravalli)	0
30089 (Sanders)	0

### Relevant Programs and Completions by Institution

CIP Code	Title	Institution	Award Level	2006 Completions
3.0601	Wildlife and Wildlands Science and Management	The University of Montana	Bachelor's degree	41
3.0501	Forestry, General	The University of Montana	Bachelor's degree	38
3.0101	Natural Resources/Conservation, General	The University of Montana	Bachelor's degree	27
3.0501	Forestry, General	The University of Montana	Master's degree	17
3.0501	Forestry, General	The University of Montana	Doctor's degree	8
3.0601	Wildlife and Wildlands Science and Management	The University of Montana	Master's degree	5
3.0101	Natural Resources/Conservation, General	The University of Montana	Master's degree	4
3.0601	Wildlife and Wildlands Science and Management	The University of Montana	Doctor's degree	3
3.0201	Natural Resources Management and Policy	The University of Montana	Master's degree	3
3.0299	Natural Resources Management and Policy, Other	Flathead Valley Community College	Associate's degree	2
3.9999	Natural Resources and Conservation, Other	The University of Montana	Award of at least 1 but less than 2 academic years	2
3.0201	Natural Resources Management and Policy	The University of Montana	Bachelor's degree	0



# ABOUT EMSI AND THE DATA

## About EMSI

EMSI provides integrated data, web-based tools, and consulting services to analyze regional economies intelligently in terms of economic base, industry and employment trends, economic impact simulations, industry clusters, regional competitiveness, human capital, labor market supply and demand, and demographics. EMSI's integrated database is based on 70 government sources, making it much more comprehensive, accurate, and detailed than any single source available. In addition, EMSI's web-based suite of analysis tools makes the information easy to access and use. If you would like to learn more about EMSI or its products and services, please visit us online at [www.economicmodeling.com](http://www.economicmodeling.com), or call 1-866-999-3674.

## EMSI Data

As a data provider, we gather and harmonize data from 70 state and federal sources, creating in-house a comprehensive and current database that is unsurpassed for its breadth and detail. Industry, workforce, and demographic data are available from state and county levels all the way down to individual ZIP codes, and users can build custom regions from county and ZIP code areas. In addition, by combining dozens of data sources, we can fill gaps in individual sources (such as suppressions and missing proprietors)—yielding a composite database that exploits the strengths of each source. Finally, our database is updated biannually, so our subscribers have access to the most complete and up-to-date information on the market.

## EMSI's StrategicAdvantage™ (SA)

*The report was created primarily using the Economic Forecaster and Career Pathways modules, two of four modules within SA. Economic Forecaster is a powerful, labor market projection tool that will allow workforce and economic developers to create detailed industry, occupation and demographic analyses that can be used to better analyze the regional economy and workforce. The Career Pathways module offers data and analysis related to occupational competency (knowledge, skills and ability) requirements, regional human capital, and ways of identifying employment and re-training opportunities for unemployed or dislocated workers.*

EMSI's StrategicAdvantage™ web-based analysis suite capitalizes on the company's premium database to produce accessible analysis and reports. The suite includes four main modules—**Economic Forecaster**, **Economic Impact**, **Career Pathways** and **Educational Analyst**—which each include several analysis tools that allow users to create customizable tables, graphs, and maps with the click of a button.

With EMSI's StrategicAdvantage,™ workforce professionals and economic developers can:

- Perform instant analyses with an intuitive web-based interface,
- Understand current and future trends in a regional economy (industries, occupations, demographics) with 10-year projections,
- Create presentation-ready graphs, tables and maps,
- Learn how to draw the right businesses to a region and maximize return on investment,
- Run impact scenarios of businesses entering, leaving, growing, or shrinking in a region,
- Know the skills embedded in the workforce and required by specific occupations,
- Minimize unemployment and transition workers into high-demand, high-wage occupations, and
- Identify the businesses and workers a region needs to recruit and retain in order to make its economy thrive.

## Selected EMSI Data Sources

CD Light, LLC, d.b.a. ZipInfo.com. ZIPList5 Plus Zip Code Data.

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\_\_\_\_\_. National Replacement Jobs data.

\_\_\_\_\_. Projected National Occupation Matrix.

\_\_\_\_\_. Quarterly Census of Employment and Wages. (also known as ES-202 Covered Employment & Wages Data.)

In addition, EMSI uses labor market data and projections produced by nearly all 50 individual states.

## About This Report

This report was produced by Economic Modeling Specialists Inc. using a proprietary, integrated database built from 70 state and federal sources. It was developed in partnership with Workforce Strategy Center to provide a data-driven, occupation-focused overview of a regional industry cluster. The goal of the report is to assist regional planners in their understanding of the region's labor market within a particular cluster. Knowledge of the local situation is strongly recommended to interpret all the data correctly.



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